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# **APS/Users Monthly Meeting**

**November 9, 2005**

**CAT to XOR Operation**

**Gabrielle Long  
XOR**





# Sectors 11 and 12

year	new staff	joint positions	total staff	postdocs
2004	0	0	7	2
2005	2	2	10	3
2006	(2)		10 + (2)	3 + (1)



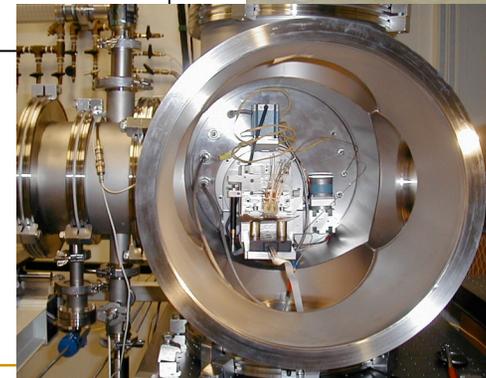
- New capabilities in **SAXS** and **future high-energy scattering**
- Construction, commissioning, (and in 2006 operation) of dedicated **powder diffraction**

## ■ Sector 11

- Eulerian cradle
- Large SiLi detector
- Diffractometer and table MAR
- 11-ID-B table

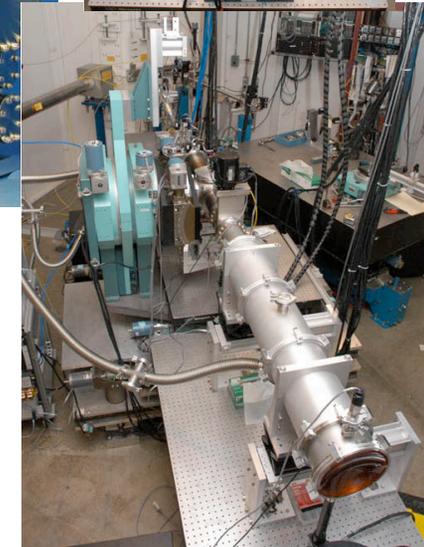
## ■ Sector 12

- CCD camera upgrade
- GISAXS chamber



# Sector 8-ID

- **From IMM-CAT to IMM/XOR**
  - FY2002                      0.5 FTE    (0.5 Technician, 0 Scientist)
  - FY2003                      2.5 FTE    (0.5 Technician, 2 Scientists)
  - FY2004 and FY2005    4.5 FTE    (0.5 SA, 4 Scientists)
- **Beamline Specialization: XPCS**
  - EPS, control, network, computing updated
  - XPCS optical contrast increased 70%
  - Experiment stability increased 300%
- **APS capital investment**
  - X-ray optics to preserve beam coherence
    - *New mirror*
    - *New monochromator*
- **Supported General User Time: 80% in 2004**
- **Beamline Readiness**
  - XPCS setup time decreases dramatically
  - Overwhelmingly satisfied users
  - High-impact publications (**6 PRLs**) in FY2005
- **Dedicated GISAXS beamline commissioned**
  - Very well received by the NanoScience community



## Sector 7-ID

- **From MHATT-CAT to MHATT/XOR - new staff**
  - FY2004 and FY2005      4.5 FTE (0.5 SA, 4 Scientists)
- **Beamline Specialization: Ultrafast Science**
  - Redefined the function of each experimental enclosure
  - Focus on fs-laser-pump / x-ray probe experiments
  - Attract many new users in ultrafast and high-field science
- **APS capital investment made a true fs-laser based center**
  - State-of-Art laser (procured with partner users)
    - *Reliability from 30% to >95%*
    - *Hours of operation from 400/yr to 3000/yr*
    - *User groups from 1 to 5*
    - *Number of users from 5 to 18*
- **Supported General User Time: 80%**
- **Dedicated laser enclosure commissioned**



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# Sector 20

- **From PNC-CAT to PNC/XOR - new staff**
  - FY2004 and FY2005 5.0 FTE (1 SA, 2 Scientists, 2 Engineers)
  - plus Steve Heald and Robert Gordon
- **Beamline Specialization: XAFS, X-ray Raman, DAFS, . . .**
- **APS capital investment**
  - 13-element detector
  - APD detector
  - Low temperature microprobe
- **Beamtime allocation**
  - 20-ID
    - 20% beamline staff
    - 30% PUPs
    - 50% GU and PNC
  - 20-BM
    - 20% beamline staff
    - 80% general users

# Sector 9

Advanced  
Photon  
Source

ARGONNE NATIONAL LABORATORY

- **From CMC-CAT to CMC/XOR**
  - CMC-CAT officially began the transition October 2005
- **9-ID supports**
  - inelastic x-ray scattering
  - liquid surface scattering
  - small-angle x-ray scattering
- **9-BM supports**
  - 2 - 6 keV XAFS
- **Staffing to operate and support users today**
  - 9-ID: 3 scientists, 1 SA
  - 9-BM: 1 SA
- **Planning calls for two independent ID beamlines**
  - IXS and LSS on separate undulators
  - SAXS activities to move to another location at APS



# Sectors 33 and 34

- **From UNICAT to UNI/XOR**
  - UNICAT begins transition January 2006
- **33-ID**
  - USAXS
  - Newport kappa diffractometer
  - pulsed laser deposition
  - surface and interface scattering
- **33-BM**
  - XAFS
  - x-ray topography
  - general purpose scattering and diffraction
- **34-ID**
  - x-ray microscope
  - coherent x-ray diffraction
- **XOR staffing to operate and support users**
  - 2 scientists and 1 SA ( + 1 additional hire in 2006)
- **Tactical plan calls for USAXS to move to 32-ID**

